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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,024	11/28/2001	Raymond H. P. Thomas	30-4969 CIP1	7671

7590 08/25/2003  
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EXAMINER

PASTERCZYK, JAMES W

ART UNIT PAPER NUMBER

1755

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/997,024**

Applicant(s)  
**Thomas et al.**

Examiner  
**J. Pasterczyk**

Art Unit  
**1755**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 14, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above, claim(s) 23-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 35-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claims 1-39 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other: \_\_\_\_\_

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-22 and 35-39, drawn to a method of making a supported catalyst, classified in class 502, subclass 104.
- II. Claims 24-34, drawn to a method of making a catalyst using a hydrofluorocarbon solvent, classified in class 502, subclass 104.
- III. Claim 23, drawn to an olefin polymerization process, classified in class 526, subclass various depending on the specifics of the catalyst used.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as necessarily being capable of use together and have different effects, one to make a catalyst using a solvent in a supercritical state, the other using a hydrofluorocarbon solvent. In addition, invention II is capable of supporting its own patent since there is no necessary relationship between a solvent being a hydrofluorocarbon and the physical state in which it is used to make a catalyst.

Inventions I and III are related as process of making and process of using the product. The use as claimed cannot be practiced with a materially different product. Since the product is not allowable, restriction is proper between said method of making and method of using. The product claim will be examined along with the elected invention (MPEP § 806.05(i)).

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Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as being capable of use together and have different effects, one to make a catalyst, the other to make a polyolefin.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Brett Freeman, Esq., on 8/12/03, a provisional election was made without traverse to prosecute the invention of group I, claims 1-22 and 35-39. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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6. The abstract of the disclosure is objected to because it lacks the general method of claim 1, instead focusing on the narrower method of claim 35, and it uses the incorrect term “supercritical-like solvents”; c.f. below. Correction is required. See MPEP § 608.01(b).

7. Claims 1-22 and 35-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 5, 6, 8-11, 17-20, and 37, it is not clear what property makes a solvent “supercritical-like”. Indeed, the term “supercritical solvent” is a misnomer since it is not a particular property of the solvent alone which makes it supercritical, but the particular temperature and pressure at which the solvent is held in its phase diagram which makes it be in the “supercritical state”. Claim 5 appears to recognize this fact much more clearly. Also see the general teachings of the McLaughlin reference.

In claim 13, l. 2, the proper term is --tetrakis--, not “tetrabis”, and in the third line insert --an-- before “alumoxane” since this term refers to a genus of mixtures of compounds.

In claims 14, 15, 20, 21, 38 and 39, “said porous support” lacks antecedent basis since the superior claims only recite a “support material” with no mention of porosity.

In claim 22, it is not clear what is meant by “a selective solvent for said second organic catalyst”; is the solvent simply a better solvent for the second catalyst than the first? If so, then a more accurate term might be “solvent in which the second organic catalyst is more soluble than the first organic catalyst”.

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Further in claim 35, again “supercritical solvent” is a misnomer since it is in fact a solvent in a supercritical state; it is not clear how evaporating the solvent in the supercritical state removes the first solvent unless the first solvent either azeotropes with the solvent in the supercritical state or the conditions of pressure and temperature are such that the first solvent also is volatile along with the solvent in the supercritical state; the element of causation appears to be lacking. It is also not clear how one contacts said first solvent only with the solvent in the supercritical state; it seems that the entire solution and support material must be contacted with the solvent in the supercritical state.

In claim 38, step f, “supercritical solvent” is again a misnomer.

Throughout the claims and specification, the term “organic” is used to modify “catalyst”, yet when the catalyst compound has a metal-carbon bond, as the metallocenes have, the proper term is “organometallic”. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). Hence “organic” appears to have been redefined in a manner inconsistent with conventional use by applicants.

8. Claims 1, 5-22, and 35-39 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the “organic” catalyst being a metallocene, does not reasonably provide enablement for said catalyst being e.g. a nickel diimine compound, a Friedel-Crafts Lewis acid organic compound, or any enzyme which, of course, are generally organic. The specification does not enable any person skilled in the art to which it pertains, or with which it is

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most nearly connected, to make or use the invention commensurate in scope with these claims.

The present specification, while making brief reference to organic compounds other than metallocenes as organic catalysts, limits its specific examples to metallocenes. Given the broad scope of the term "organic catalyst" found in the independent claims, the specification does not provide the guidance necessary to practice the present invention with any other "organic catalyst" as that term is understood to mean.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-22 and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLaughlin et al., USP 4,916,108 (hereafter referred to as McLaughlin) in view of Hoel, USP 4,871,705 (hereafter referred to as Hoel) and Keller et al., USP 5,744,556 (hereafter referred to as Keller).

McLaughlin discloses the use of supercritical state solvents to dissolve metal catalysts which are then impregnated into the pores of particulate or monolithic support materials, the supercritical solvent then being removed by either decreasing the ambient pressure or increasing the ambient temperature above the solution (abstract; col. 3, l. 66 to col. 4, l. 62; col. 5, l. 61 to col. 6, l. 6; col. 7, l. 17-55).

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McLaughlin lacks disclosure that the catalyst may be an organic catalyst.

However, Hoel teaches that metallocenes with their cocatalysts are conventional organic catalysts which may be dissolved in solvents having boiling points close to room temperature (abstract; col. 8, l. 43-65). Keller teaches specifically that metallocenes and their cocatalysts may be dissolved in supercritical state solvents (abstract; col. 3, l. 26 to col. 4, l. 35).

It would have been obvious to one of ordinary skill in the art to apply the teachings of Hoel and Keller to the disclosure of McLaughlin with a reasonable expectation of obtaining a highly-useful method of making a supported catalyst with the expected benefit of the catalyst being evenly coated over the surface of the support material.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is (703) 308-3497. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for normal faxes, 872-9311 for after final faxes.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

J. Pasterczyk, AU 1755

8/13/03



Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700